

## Introduction: Digital Literary Production and the Humanities

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For the last twenty years that scholarship has been gradually developing on subjects such as cyberculture, digital literature, new media textualities and narrative, many trends and attitudes have emerged as responses to the risks and potentialities deriving from the engagement of writing practices with digital inscription technologies. In the current *Gramma* issue, particular attention is paid to the transformative shift that has occurred in literary scholarship with the advent of digital practices as well as with the intersection between digitality and literary production as an artistic, academic, and teaching practice. In particular, this issue seeks to initiate a series of dialogues by bringing together various practitioners, scholars, and educators from diverse cultural contexts and backgrounds—Australia, India, Greece, Portugal, Sweden, the U.K., and the U.S.—in its attempt to approach the digital tools we use nowadays in terms of how we think, write, read, create, and communicate. Additionally, it aims at shedding light on the developments that have occurred in terms of interdisciplinary collaborations and writing trends between print and digital narrative endeavors also in relation to online application and software design.

The contradictions as well as distortions that have emerged with regard to the production and distribution of printed and digital texts in western culture result from the alarming warnings about book extinction that emerged at the end of the 1980s, with publications, such as Sven Birkets' *The Gutenberg Elegies: The Fate of Reading in an Electronic Age* (1994), having nowadays been steered to a totally different and diversified direction put forth by publications, such as N. Katherine Hayles and Jessica Pressman's *Comparative Textual Media: Transforming the Humanities in the Postprint Era* (2013). What Hayles and Pressman claim is that, "complexly heterogeneous contemporary mediascapes, enable comparative media studies to catalyze new insights [. . .]. Part of the appeal of comparative media studies is its ability to contextualize complexities in ways that do not take for granted the assumptions and presuppositions of any one media form (or media culture)" (ix). What is highlighted here is a much deeper need to establish networks or ecologies of textual practices and means of communication that move beyond limiting binary distinctions—either print or digital—so as to explore the kind of interconnections, conversations, and convergences that develop between them.

International scholarship is currently at the threshold of a major paradigm shift. Johanna Drucker, in her keynote address at the Resurrecting the Book conference that was held in Birmingham, U.K., in 2013 argues that "the book is here to stay [. . .] media do not displace

each other in a linear way, media artefacts exist in ecologies, in systems, where they reconfigure each other.” Certainly Drucker’s words should not be viewed from a singular perspective that wants the “threat” to be deriving in a unilateral fashion from what is blatantly taken to be the digital other. What Drucker comments on here presupposes a different understanding of what we are mostly familiar with, that of printed matter, not in terms of its resilient nature in relation to the so-called ephemerality of digital media but of its malleable technological makeup. This certainly encourages a different understanding of digital technologies as it invites us to view them not as separate agents from, but as part of a cultural continuum that binds them together with printed matter. This different way of thinking about what the inscription technologies (print and digital tools) stand for leads us to alternative considerations of cultural production and cultural creativity; these gradually reengineer narrative habits, practices, and techniques, contributing in this way to a reconceptualization of twenty-first century literary writing and production practices.

There is definitely a shift in the future possibilities that open up within digital and print literary creation if one considers the diverse approaches and applications that are available and can emerge, as is featured in the essays of the current special issue. This introduction to media ecologies marks an attempt to highlight the interdependence between mediums as well as between these mediums and their users. If we think of how media ecologies highlight the interdependence between mediums, as well as between these mediums and their users, Keri Smith’s *This is Not a Book* (2009) and *Wreck This Journal* (2012) might be examples that come to mind. Both being tongue-in-cheek projects about the role that print is expected to fulfill nowadays, these books encourage and challenge readers to take a test of endurance by asking them to take their book even in the shower with them in an attempt to highlight not the authoritative but certainly the reinventive and transformative power of print. Such an outlandishly parodic attitude towards the functionality of printed matter makes us wonder on a much deeper level about the ways in which digitality and print, when viewed not separately but together, can enhance human communication or even consciousness by building on what is familiar, in other words, on what already exists, opening up in this way to other diverse and interlocking ways of creative conversation between them. In our world, both objects and subjects are equally dominators of and dominated by external reality and the data it generates and is encircled by. They are certainly influenced by the socio-cultural changes occurring around them and they are both recipients and transmitters of such data. As for the objects surrounding them, they are not only part of a material or tangible, but also of a digital world that invites them to engage in seemingly analogical to real world hands-on practices. The ability print and digital objects have in terms of storing and disseminating knowledge, indirectly and effectively does have an impact on the way these objects and subjects respond to digital and analogue events that lead them both to processes of confluence and convergence. Drucker, in her article “Reading Interface,” where she comments on the capacity digital screens have to engage us into a kind of reading action that echoes—with a twist—our print reading habits, also talks about “the cognitive adaptation and change” that occurs as

“[o]ur notions of privacy, property, identity, and even individual voice and self are modified constantly in the exchange, bound to the cognitive modeling *of experience through experience*” (217, italics in original). What this makes us realize is that a different attitude and understanding is needed both in terms of digital and print manifestations for the creation not of surrogate forms that simply emulate or copy print matter and its practices, but of spaces of interpretation for the promotion of interpretative acts that have always been part of the literary enterprise within the scope of the Humanities.

Anne Burdick et al., in the volume *Digital\_Humanities* (2012), say that “aside from the struggle of resources, there is an urgent need for a critical language to describe digital projects and for common—yet flexible—standards for evaluating animation, navigation, information architecture, and other features of born-digital projects and platforms” (114). For such a critical language to develop though, a different engagement with technological tools, whether as print or digital, is needed. Burdick continues by arguing that “building tools around core humanities concepts—subjectivity, ambiguity, contingency, observer-dependent variables in the production of knowledge—holds the promise of expanding current models of knowledge” (104). What all these suggest and point to are changes that need to occur with regard to our cultural and aesthetic attitudes towards the print and digital tools and materials we are using and are engaging with. But are we ready to look at these tools cognitively? Are we in a position to open up to variable models of learning, as these result, for example, from transmedia and participatory practices, that will gradually lead to more synthesizing perceptions, opinions, values, and outcomes in relation to the tools we interact with? All these are just a few questions in the midst of many more that this special *Gramma* issue tries to address as the challenge lies not so much with the tools we use but with the attitudes or assumptions we as humanists and literary analysts project onto them.

If recent digital tools have provided literature with a reinvigorated sense of the need to reflect on the medium of textual production, and if reassertions of the printed book’s potential for experimentation have added complexity to debates about the interactive and participatory opportunities offered by electronic literature, then the emergence of digital humanities as an academic discipline has further complicated how literary production today is to be understood. Developing out of the collision and combination of humanities scholarship with computational tools and methods that took on momentum in the late-twentieth century, research in the digital humanities has often focused on digitization and the associated opportunities for building archives, databases, and other resources that provide scholars with unprecedented access to considerably enhanced repositories of specialist information. “Database tools provided the foundation of the first Digital Humanities projects that were seeded around the world,” Burdick et al. write, “[t]hough this work was varied in nature, there were common, salient features: a concern with textual analysis and cataloging, the study of linguistic features, an emphasis on pedagogical supports and learning environments, and research questions driven by analyzing structured data” (8).

Such developments have allowed research and scholarship in literary studies to embrace new methods for textual analysis. Early initiatives that responded to these possibilities have often emphasized the opportunity to put digital tools to use in the service of providing full-text and openly accessible online literature libraries; Project Gutenberg, the World Digital Library, and the Million Book Project are perhaps the most familiar, though ongoing digitization projects, while, for example, the British Library, the Bibliothèque Nationale, and the Library of Congress are continuing to expand the volume of books available via electronic databases. This ambition to maximize the depth and range of digital repositories continues with the more recent expansion of online scholarly resources that build on the arrival of ebook and ejournal formats. The emergence of these repositories is also accompanied by the development of archival tools that are built on the premise that digital libraries can be explored and navigated with much greater precision than what we were used to, opening up literature to new modes of reading and analysis.

Several questions arise in the context of this prodigious expansion of the literary digital archive. Most immediate, perhaps, are questions associated with scalability: how is literary studies to maintain scholarly principles and practices when the volume of texts that is available for scrutiny is of an increasing, almost certainly innumerable, magnitude? How is literature to be conceived in the face of this colossal digital growth of what is available to be read? How is literary studies to proceed when the tools that facilitate analysis not only offer literary texts up to ever closer scrutiny (and thus to perpetual and productive acts of interpretation), but also allow them to be archived, catalogued, and accessed according to particular—variable, inconstant, and constantly upgraded—coding practices and storage formats? How is the critical act to survive in an age in which the literary text becomes evanescent even as it gains immediacy; more readily and more rapidly available but at the same time lacking the tangible sense of being-to-hand that is associated with the print book; so insistently in front of us and yet so vulnerable to slipping beyond reach?

Some of these questions have, of course, been addressed by critical models that renounce the idea that interpretation should seek out a text's innermost meaning. For example, an elementary observation might be that there have always been too many books to read, but this recognition must result in a more provocative insight: literature is intrinsically hyper-abundant. There is something about literature that cannot be fully captured by efforts to enclose it within a singular account of how it is produced, how it functions, or how it is received. In the face of such an insight, literary studies have an opportunity to take up Umberto Eco's injunction to resist the bibliographer's encyclopedic tendencies and, instead, conceive the library as a collection of books yet to be read; that is, as an archive of the unknown, or what Nassim Nicolas Taleb terms as an "antilibrary." Tempting though it might be to see in online repositories the capacity to build an archive of all the world's texts—and, therefore, to contain literary textuality within a fixed and finite space of meaning—the problem that scalability brings is answered by Eco's notion of the open and impermanent archive. Rather than requiring resources that would yield ever greater clarity about texts'

granular particularity, digital archives should be understood as another version of the antilibrary; rather than yielding a text's immanent character and significance, interpretation in the digital archive would, according to such a definition, be experienced only as perpetually deferred.

Formative directions in the digital humanities do not always address such radically unsettling hermeneutic questions, but neither do they anticipate the question of cultural production that results from the large-scale digitization of literary works. In contrast with digital humanities' early promotion of online repositories, more recent work has emphasized the need to foster critical models that are responsive to the shifting and taxonomy-resisting narrative, poetic, and artistic possibilities that are ushered in by digital and electronic production. What the digital humanities has come to consider, David Berry writes, is "the plasticity of digital forms and the way in which they point to a new way of working with representation and mediation, what might be called the digital 'folding' of memory and archives, whereby one is required to approach culture in a radically new way" (2). These acts of "folding" require a rethinking of how memory institutions understand themselves for the reasons discussed above. But they are also initiating cultural practices that absorb, process, and reconstruct in artistic and literary forms the data that is generated by digital archives. For Pressman, "Databases are not just repositories for storing data; they are structures that organize, prioritize, and shape information [. . .] influencing] human memory and cognition. Databases are increasingly used in digital literature, and such artistic contexts expose how the formal constraints of databases affect poetics" (102). No longer merely facilitating access to the world's literature, archives, and databases have, therefore, come to provide writers and digital media artists with compositional raw material. In this context, the idea of digital literary production does not simply refer to how writing has moved into electronic and online environments. Pointing to how literature can be generated from digital data—to born-digital writing—this idea also announces a transformation of the stuff or materials of literature in addition to its elements and generic features.

Numerous concepts have been offered in the effort to convey the forms that this kind of literature can take. Hayles, for example, points to the early categories of hypertext and interactive fiction, as well as to more recent sub-generic categories as locative narrative, codework, and generative art, as indicative of attempts to develop a critical vocabulary capable of addressing electronic literature's distinctive qualities and dimensions (*Electronic Literature: New Horizons for the Literary* 30). This attempt can be evidenced in the two volumes of the *Electronic Literature Collection*, published respectively on the web in February 2006 and February 2011 under a Creative Commons license that has allowed free access to an array of electronic writings and practices in an effort to bring together different artistic and creative endeavors with regard to digital textuality and software design. Ventures, such as these, point to a complex field of literary production in which writing takes different trajectories in its pursuit of a fluid and mutable textual terrain of action. However, to claim that digital representations are notable because of their plasticity does not only underline the

need to develop an appropriate critical terminology. This claim also suggests that such a terminology needs to remain provisional due to the ongoing developments such representations undergo. The history of criticism is marked by repeated attempts to formulate methods of interpretation that would capture the shape and dimensions of particular genres (or, indeed, of literariness more broadly); electronic literature's tumultuous and disorderly forms and engagements serve to remind readers and critics that textuality is not so easily contained and that interpretation for that matter remains perpetually unreliable.

This disobedient disregard for the stable, determinable, or knowable is perhaps nowhere more evident than in recent literary experiments with haptic digital technologies and with the book itself as a haptic technology. Touchscreen devices and augmented reality tools allow readers to engage with increasing complexity in the production of narrative or the assembling of a poetics that moves beyond mere reproduction of print-based writing on the screen. With such works, the screen becomes not a superficial layer through which readers pass in order to construct interactive texts, but a surface that demands attention and tactile interaction. This is the exact surface that Drucker terms as the interface being "a space of individual and collective formation" where "we are not watching something unfold [. . .] we are produced by it as its subject" ("Reading Interface" 217-18), since it is this ongoing interaction between readers and digital technologies that enhance the writing and, to an extent, reading experience. However, this coevolving process can often go unnoticed when, for instance, in the case of printed matter, one can easily take the contemporary book form to be the same with the conventional codex just because they look the same, although this is no longer the case. Readers nowadays are not merely leafing through a paper-bound text, but they are interacting with a digitally-processed paper interface that asks for different treatment and conceptualization strategies.

If electronic writing once promised an escape from the boundedness of the book as physical artefact, these experiments with the media and materiality of textual production point to how digital literature is being re-established as something not conceptually abstract, but as something that needs to be touched and held in order to be appreciated. Rather than a disembodied textuality that becomes free through its detachment from paper or other physical media, literary meaning now becomes actualized through a dialogue between the digital and the tangible. No longer conceivable as merely electronic, experiments in textual production often embrace multimodality by bringing the textual into contact with other aesthetic and sensory (especially visual and auditory) forms that enhance not only textual content but also textual design by building on its interface capacity, in other words, its compositional, graphic, and visualization potential. With these texts, Alison Gibbons writes, we discover a "multitude of semiotic modes in the communication and progression of their narratives" (420). While these multitudinous modes of representation have resulted in more complex approaches to the relationship between page and the screen—with the page now treated as the screen—they also invite a more extensive reassessment of the dynamic interchanges that mediate perceptions of text, self, and world "in which the experiential construction of an in-betweenness that is

inclusive, both human and computational, comes into being” (Drucker, “Reading Interface” 218).

This sense of the dense and intensive connections that draw together literary production and interaction leads Richard Grusin to propose “radical mediation” as an additional concept in the critical lexicon that is developing around digital and electronic cultural production. “What has become increasingly apparent in the first decades of the twenty-first century,” he writes, is that new media technologies

are not secondary concepts, agents, or apparatuses that come between or connect extant subjects and objects, cultures and natures, bodies and environments, or humans and nonhumans. Rather [. . .] these new formations of technical media produce the mediations through which such oppositions, and more radically such multiplicities, are generated in continuous, but by no means seamless, feedback loops. (146)

Grusin’s proposal here demonstrates the distance travelled since the arrival of the digital humanities. The impulse to digitize that characterizes the emergence of the digital humanities, he suggests here, has been supplanted by the recognition that mediation does not begin or end with new technical apparatuses: questions of mediation are not suddenly relevant because literary works, for example, can now be translated into code and be placed in digital repositories. Electronic literature is provocative because it emphasizes opportunities for developing a compellingly interactive textuality since it explores the interconnection of human and computational practices. Drucker characteristically claims that “from the organization and labeling of tabs, menus, and other navigational features” (218) a far more fruitful engagement with both technological and creative practices can emerge. As a result, “[n]ew, advanced research agendas driven by a desire to expose interpretation rather than display its results may separate the critical from the engineering practice of digital humanities by revealing interpretative practices instead of by producing representations” (Drucker, “Reading Interface” 218). Combined with Grusin’s rethinking of mediation, Drucker’s claim leads to the realization that this kind of literature is gaining further significance today because it reveals mediation and not representation to be fundamental to the production and reproduction of material textual life, a realization that is expected significantly to alter literary experience in the course of the twenty-first century.

Such a shift becomes quite apparent in the essays collected in this special *Gramma* issue. Divided into two parts, the first attempting to comment on current debates and assumptions that surround digital literary writing by drawing on particular archival, novel, game, and wiki projects, and the second drawing together a number of insights into actual digital literary practice from the practitioners’ own perspective, this volume brings to the foreground the complexity and compelling multiplicity of print and digital narrative conversations.

The first two essays, in Part I, reflect on existing debates about interactivity and digital writing as these emerge from particular online archives and texts. Particularly, **Manuel**

**Portela's** "Writing the Archive: An Experiment in Literary Self-Consciousness" focuses on the role digital archives of print literary texts play in bringing on the surface the complex and multilayered nature of writing practice, while revealing at the same time its impact on the formation of the authorial self. By focusing on the *LdoD* archive that commenced in 2011 by building on Fernando Pessoa's *Book of Disquiet*, its multiple editions, type- and handwritten fragments of Pessoa's own work as well as on his invention of the heteronymic author, Portela exposes the way in which a digital archive can function not simply as a repository of literary texts and manuscripts but as a dynamic medium that, through the use of various authorial and editorial tools, can expose the various transformative stages a text goes through till it reaches its tangible book form. The potential of such an archive is further enhanced when external users are invited to interact with its archived material by contributing their own textual responses to Pessoa's deposited works or fragments. In this way, they indirectly turn into the heteronymic authors and editors of Pessoa's own work, a technique he envisioned and practiced, as they are engaged in a process of extending or rewriting the original that, consequently, turns them into collaborative partners or co-authors. This kind of interaction that the digital archive facilitates dynamically highlights the loop effect writing triggers due to its reliance on the interchangeability of roles from author, to editor, to reader, a course of action that sheds light on the self-reflexive and self-making quality of the writing act itself.

**Sofia Politidou**, with her piece entitled "Exploring the Readers' and the Writer's Roles in Joyce R. Walker's Hypertext 'Textural Textuality: A Personal Exploration of Critical Race Theory' (2002)," continues the discussion by touching upon the variable that hypertextual writing contributes to writing and reading practice as a means of racial self-formation and self-realization. By closely analyzing how Walker's hypertext functions in the way it approaches both racial and ethnic identity, Politidou focuses on the benefits such an online hyperlinked narrative offers when it comes to the treatment of complex socio-cultural issues. Without taking positions, Walker resorts to hypertext in an attempt to generate various narrative paths as these emerge from the variable sources "Textural Textuality" contains. Depending on the users' own reading choices, Walker encourages them, through multiple entries into her hypertext, to approach race-related themes from alternate perspectives so as to formulate their personal viewpoints and critical responses to them. Through its multiple routes and entry points Walker's online text exposes the complexity and multiplicity of the theme under examination, that of race and ethnicity, while it enables users to come to their own conclusions as to how race is structured, treated, or even constructed. Digitality and interactivity in this case contribute towards the active engagement of the users with a delicate topic, while exposing them to the intricacies of the hypertext medium, since all depends on the choices users make, which can either distance them from or commit them to a social or cultural cause.

The following two essays expand the field of user engagement in the terrain of online wikis and game platforms. Specifically, **Despoina N. Feleki** with "Wikia Fandom Craze:



Connecting, Participating, Creating, and Re-negotiating Boundaries” takes the discussion to fandom online communities. With attention paid to *Wikia* and to its corporate and entrepreneurial connections with other informative, entertainment, and game online platforms, she comments on the development of fan subjectivity as is shaped up by new media, popular culture, and consuming practices. With *Wikia* having expanded into a vast and diverse online fan universe, it generates, according to Feleki, both “bottom-up” and “top-down” actions that seem to blur the boundaries between fan-fuelled and corporate-driven activities. Although fans seem to be enjoying sharing news about or responding to their favorite books, films, and games, they, actually, end up consuming the information that the wiki online platforms provide them with. Without realizing it, they are not simply participating in free and playful transmedia communication and narrative practices, but they labor freely for the big corporations, since it is their ideas that often lead to the next commodity that they are invited via the online platforms to engage with. As a result, they become part of a corporate production line that often manipulates fan enthusiasm about popular culture trends so as to foster industry-generated roles, relationships, and subjectivities. However, if attention is paid not to the users themselves but to the materials they exchange and produce, we may come to some very useful realizations as to the behavior and writing patterns that emerge from such online activities that are not separate but part of the experience wiki platforms generate. This becomes evident in the case of videogames as **Souvik Mukherjee** writes in “Videogames as ‘Minor Literature’: Reading Videogame Stories through Paratexts.” He argues that no new media action should be studied in isolation but always in relation to the connections it creates between users and other mediums of expression and communication, as is evident, for example, in videogame practice. This kind of interaction proves to be far more valuable than the storyline of the game itself. By referring to the video game walkthroughs, After Action Reports (AAR) and Let’s Play (LP) video commentaries, Souvik highlights their paratextual contribution to how the actual videogame experience can evolve not only in terms of the storyline but, also, in relation to the playing strategies users may adopt. The emphasis placed on videogame paratextuality challenges the way this kind of narrative action has been viewed. By drawing on Gerard Genette’s theory of paratextuality, Roland Barthes’ notion of co-writing and Gilles Deleuze and Félix Guattari’s concept of minor literature, Souvik manages to point out that videogames and the paratextual material that accompanies them are not at all marginal, but they should be viewed as part of a long genealogy of theoretical and literary considerations of open-ended writing activity. As a result, videogames and all the paratextual material that accompanies them massively contribute not only to the enhancement of the videogame experience but also to the understanding of videogame practice and narrative design. Both gamers and game commentators are caught up in this way in an ongoing exchange of views and attitudes that offers significant insights into how the videogame medium functions, while it acknowledges the diverse narrative patterns and techniques they draw from, that brings videogames very close to established literary genres.

In this case, how does this affect the way we view our engagement with the digital, and what is the impact this engagement has on literary writing practices and production not only from a mere scholarly but also from a pedagogical point of view? **Danuta Fjellestad**, in her paper with the title “Dancing with the Digital: *Cathy’s Book* and *S.*,” turns our attention to contemporary examples of print-bound fiction texts and their web-assisted practices in an attempt to delineate the reciprocal connections that can develop between both print and digital media. Sean Stewart and Jordan Weisman’s *Cathy’s Book: If Found Call (650) 266-8233* (2006), illustrated by Cathy Briggs, and J. J. Abrams and Doug Dorst’s *S.* (2013) constitute two very good examples that certainly diversify our understanding of digitality in relation to print. Even though university students nowadays are comfortable with various computer processing practices and online social media platforms, their reading habits are still codex-bound, finding any kind of print and digital interaction difficult to spot or comprehend. Although theorists comment on the interconnections between print and digitality, as is the case of Hayles’s metaphor of the “ecotomes,” Fjellestad argues that we need to take gradual steps starting from the familiar material feel of print so as to be able to appreciate its online enhancements. This is precisely where print fiction, such as *Cathy’s Book* and *S.*, can prove to be useful, in bringing readers to ongoing contact with their enhanced material features and intricate writing practices—in relation, for instance, to collaborative authorship and copyright, typographic and narrative (haptic/optical) design—enabling them, in this way, to appreciate its multimedia aspects as well as the narrative opportunities that emerge (if they so choose) in addition to the print bound stories, and explore their online narrative recommendations. This kind of approach has a bridging benefit as it allows readers to gain a different appreciation of digitality and print, since they do not have to view them separately but interwoven into a medium they feel comfortable with. This is exactly where the pedagogical effect of such an approach lies in letting readers choose the medium or reading habit they feel familiar with while being introduced to the interlinking narrative possibilities print and digitality can offer. However, it is the role of the readers in relation to what and how they read that **Will Slocombe** attempts to explore, in his essay entitled “Artificial Reading (MKII).” His piece comments on Pierre Levy’s synonymous essay, originally written in French in 1994, in an attempt to respond to the changes that have been introduced in relation to reading strategies and writing patterns due to the intervention of new media technologies. By focusing on an array of examples starting with corpora analysis and then moving on to plot bots, programs that learn to write stories (What-If Machine and Scheherazade), and Philippe Vasset’s *ScriptGenerator*©®™ (the first novel that satirizes computer-generated literary texts). Slocombe talks about the refashioning of authorial and reading roles with the introduction of computer-led practices in literary production. Despite their automated practices and immense data capacities, computers can only do what they have been programmed to do which cannot fully replace human agency in how a story is told. Even if computers can detect language patterns or the elements stories are made out of, they still lack contextual and experiential information that makes the writing and reading of stories distinct, since it is the manner that a

story is told and read that matters. However, even if computers do not simply generate patterns of storytelling but patterns of reading, could we claim that this offers an insight into the mechanisms of reading itself? Even though, as Slocombe writes, this is a skill we have fed into the computers, could we argue that by placing computer reading alongside human reading we could reach a different appreciation of our own abilities and habits? In this case, it is not so much about sharing our aptitude in certain tasks with computers that weakens our position, but the ideological boundaries that we build against them that prevents us from seeing the benefits of such a “collaboration.” Artificiality, Slocombe writes, as this derives from Levy’s text, takes different dimensions if we view it in tandem not with machines alone but with our mechanically exercised competences. Looking at what machines can do, we may reach a different level of awareness of our own artificiality or mechanically executable actions.

The essays, in Part II, reflect on the opportunities, constraints, and demands that practitioners face when responding to new and emerging tools for literary and artistic production. **Michael Joyce**’s essay looks for its title to the 1929 anthology (*Our Exagmination Round His Factification for Incamination of Work in Progress*) published in anticipation of James Joyce’s *Finnegans Wake*. But this essay also looks more broadly to Joyce’s work for a sense of the longer history of writing that is both reflexive and collaborative. We find in *Finnegans Wake*, Joyce writes, “a working prototype for the temporal, spatial, and formal indeterminacy that is likely to characterize digitality and inscription practices as writing surfaces and written surfaces become [. . .] more and more quotidian and ubiquitous in unanticipated ways.” In his essay, Joyce documents the various ways in which his own writing has embraced and explored the various surfaces on and through which inscription has been able to evolve in recent years. Beginning with a discussion of three works in progress, Joyce describes how his writing unfolds through an engagement with space, history, and representation. The first, “*Arrondissementieres* or A Round Here,” results from his residency in Paris as Récollets laureate and reflects on how the permeability of urban space (specifically, Paris’s *arrondissements*) can be conveyed through the porous forms of digital and print representation that allow narratives to collide, converge, and become uncontainable. Joyce’s collaborative (with Jay David Bolter) *The Surface of Water* is augmented reality narrative which explores the potential for locative storytelling using mobile media. “Fictional Encounters,” the third of his works in progress, is a visual art project that focuses on the notion of missed encounters, drawing in participants from across the world to “generate new visual art forms, locative writing, and an archive of viewer’s experiences in both the real and on-line worlds.” One of the most eminent and compelling of contemporary writers, Joyce in this essay also provides a sense of how these current works also flow from his recent texts—*Was, annales nomadiques, a novel of internet* (2007), *Paris Views* (2012), and *Foucault, in Winter, in the Linnaeus Gardens* (2014)—in which questions of national and metropolitan attachment, globalization, migration, sexuality, history, and cultural hybridization combine as an inescapable provocation.

For **Amaranth Borsuk**, **Kate Durbin**, and **Ian Hatcher** too, visual and textual technologies permit a captivating encounter with the mutable and combinatory, material and digital, character of both subjectivity and textuality. Documenting the production of their artists' book *Abra*, Borsuk, Durbin, and Hatcher describe how the emergence of tablet devices, and of the applications that can be produced for them, is allowing the artists' book to be reinvented as an interactive and multimodal medium. Demonstrating "the ways in which shifts in materiality provide an occasion to consider print and digital interfaces in relation to readerly agency," this essay takes *Abra* as a case study that exemplifies new possibilities for literary production and interpretation. Originally conceived as print text, *Abra* has, subsequently, extended into other genres, first, as a performance project and, then, as an artists' book which brings digital and material production together in a work that is constantly, recursively, being rewritten. This work presents itself most immediately as an experiment that erodes the separation of text from image—it offers a "visual poetics"—though it also draws readers into a haptic and auditory experience of open textuality. Borsuk, Durbin, and Hatcher situate this project in terms of the conceptual lexicon that is allowing literature's relationship with technology to be understood with greater complexity, and they look to critics such as Hayles, Craig Dworkin and Drucker when describing the unorthodox and disjunctive connections across digitality and physicality that *Abra* initiates. This work is not simply an exercise in formal innovation or a ludic series of acts that traverse media; it is, they write, an effort to think about embodiment, also, as a state of mutating and multitudinous convergence. *Abra*, Borsuk, Durbin, and Hatcher write, speaks through an "oracle" which allows this morphological process of grafting and transfiguration to be expressed as both a linguistic and subjective condition. Taking the form of "conjoined, post-human 'avatars,'" this oracle bears "attributes that one might identify as both human and animal, machinic and organic." *Abra* is, then, an audacious experiment that forces a fundamental reassessment of the body's immanently textual condition.

Similarly, considering the digital and material things that we now move through when communicating, though less fascinated by the intensification of poetic or narrative mutability, **Jason Nelson**'s essay "What Is an Interface and Why Does a Digital Poet Care?" reflects on both the physical components and the code that structure the mechanics of textual production. It is the interface—"digital bits (software, cords, a computer, OS)"—that forms the often neglected and rarely perceived substratum for the creative work of writing or artistry today. These interfaces, Nelson submits, need to become more openly embraced and recognized as a crucial feature of the literary artefact, and as vital to the text's interpretative possibilities. To these technologies he adds the literary work itself as yet another interface: "In the broader definition of interface, a rhyming couplet or a sestina, a prose poem or the stanza are all interfaces between the reader, the poet, and the poetic content." Nelson's digital poems provide evidence for what such a recognition might look like. His 2002 collection "This Will Be the End of You," in which software and mechanical interfaces are integral visual and poetic components, begins the work of foregrounding the interactivity that unfolds with greater

complexity in works, such as his 2009 “Evidence of Everything Exploding.” As well as making this case for the re-evaluation of the tools that allow contact, interaction, and translation, this essay also sets out to lay bare the processes—the routines and rituals—that allow him to create digital artworks and poems to be produced. Indeed, Nelson’s essay provides an effective study in the labor that is required for producing digital poems and artworks. As well as the work of creating new content, he writes, the demands attached to learning the language of programming tools (from Adobe Flash, Sound Forge, and Audacity to TextWrangler, JQuery and HTML5) also need to be acknowledged.

Software also figures prominently in the final essay in this special issue, “*Gateway to the World: Data Visualization Poetics*,” which reports on **Maria Mencia**’s 2014 mapping of the passage of maritime vessels through the Port of Hamburg. Combining data mined from Wikipedia and maritime databases, this project—*Gateway to the World*—has resulted in an iPad application that allows users to track ships’ movement, but also to overlay information relating to these vessels and their symbolic status. Mencia provides a sense of how her creative work is located in the wider field of data visualization, but also in respect of theories of network and information culture. One inspiration for *Gateway to the World*, this essay notes, is Manuel Castells’ account of the different socio-historical moments in which communication occurs. For Castells, the invention of the alphabet requires a process of translation from one order of signification to another; the twentieth century has witnessed the dominance of visual languages; network culture combines textual, visual, and auditory expression to form an integrated multimodality. Such a sense of a recent shift towards technologies built around this layered, networked, and dynamically interactive communication, as Mencia writes, can result in a compelling poetics of data. The Port of Hamburg itself also acts as an inspiration for Mencia’s project, not only because it provides a data-rich environment relating narrowly to maritime traffic. This port also evokes a sense of how network culture operates; it “serves here as a metaphor for the immensity of the Internet, its flow of information, its quality of openness, and its ability to connect.” Finally, other artists’ and writers’ use of big data, and of visual analytic tools that allow this data to be made more meaningful, is described by Mencia as an influence on *Gateway to the World*. This related work includes interactive maps built around cycling in London, the use of data to illustrate routes taken by ships in the nineteenth century, and the use of visualization and sonification tools to generate awareness about road and maritime CO<sub>2</sub> emissions. Often combining open source software and open data repositories, such examples are, Mencia writes, bringing about a creative practice that “allow[s] users to engage in the process of understanding data as culture.”

It is this kind of engagement that all the papers we have already discussed exemplify. Together with the notions and tendencies that have developed in the field of electronic literature that have been mentioned in the beginning of this introduction, the contributions that follow in the next two parts of this special volume prove the dynamism and interactive potential of this field of literary practice. Conversing with old and new literary trends and

technological techniques, the essays collected here attempt to illuminate the diversity of the practices that they have recently emerged, while paving the path for the development of further literary experimentations and communicative practices. The recent advancements in open source software and open access literary journals demonstrate the direction the cross-fertilization of literature and technology is taking as this will lead to far greater collaborative engagement and rapid retrieval of knowledge. Literary efforts nowadays do not break with the past, but they, certainly, highlight the importance of retaining and enhancing the communication between mediums of expression with which we are familiar (print) and with which we are becoming acquainted (digital). As editors of this volume, we have brought together various scholars and practitioners in order to elucidate the multiple trends that branch out from such an interaction, highlighting at the same time the affordances and the constraints of both mediums. Situated as we are at the beginning of the twenty-first century, we are at the threshold of major changes relating to the inscription tools we use and human cognition. Our contributors have allowed us to collect together an array of thoughts, arguments and both critical and practice-based reflections on the role all these literary and artistic practices are playing or are about to play within contemporary culture and of their impact on us as readers and users.

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